

I Claim:

1. An interface pad, comprising:
at least one inflatable member having a foam core with a cell structure
that absorbs atmospheric air, which foam core is wholly surrounded
by and bonded to a thin skin which forms a fluid tight envelope
around said foam, which thin skin has an opening for transmitting
air between the foam core and the atmosphere, which transmission
of air is controlled by a valve in said opening;
fasteners for affixing said at least one inflatable member in a location to
serve as an interface pad between a living creature and another
object; and
wherein said valve is a proportional valve, the proportional valve being
adjustable to different pressure settings, which different pressure
settings allow air to escape from the valve until the set pressure is
reached.
2. An interface pad as described in claim 1, having two inflatable
members, a left inflatable member adapted for placement between a left upper
side of a load-bearing animal and a load resting on that side and a right inflatable
member adapted for placement between a right upper side of the load-bearing
animal opposite said left side and a load resting on that side.
3. An interface pad as described in claim 2, further comprising:
a top connection adapted for linking said left inflatable member and said
right inflatable member across an upper portion of the load-bearing
animal such that said left inflatable member and said right inflatable
member hang over said upper portion adjacent, respectively, the
left and right upper sides of the load-bearing animal, said top
connection being provided by portions of receiving structures
holding said left inflatable member and said right inflatable
member; and

areas covered by said receiving structures conform to a shape appropriate for a particular equine activity such as one of show riding, dressage riding, endurance riding, western riding, barrel racing, roping, racing, hunting, jumping, steeplechase, bareback riding, handicapped riding, pack horse, paraplegic riding, therapeutic riding, and English riding.

4. An interface pad as described in claim 3, wherein said receiving structures are formed from resilient breathable moisture wicking materials with a non-slip breathable material forming a surface portion of the receiving structures, said material including a polyester mesh with PVC coating.

5. An interface pad as described in claim 3, further comprising a strap member for connecting said receiving structures underneath a load-bearing animal and holding the receiving structures in position on the load-bearing animal.

6. An interface pad as described in claim 5, further comprising connection points for a strap member for connecting said receiving structures underneath a load-bearing animal and holding the load pad in position on the load-bearing animal.

7. An interface pad as described in claim 5, wherein a breathable material including a polyester mesh with PVC coating is located between the strap and the load-bearing animal with mesh adjacent the load-bearing animal when the strap is used to hold the load pad in position on a load-bearing animal.

8. An interface pad as described in claim 3, further comprising stirrups.

9. An interface pad as described in claim 3, wherein said inflatable members can be removed from said receiving structures.

10. An interface pad, as described in claim 3, further comprising a connector adapted to bridge a load-bearing animal's withers, which connector is provided with structural reinforcement and can be used as a hand hold.

11. An interface pad, as described in claim 10, further comprising a handle between said connector and the top connection.

12. An interface pad, as described in claim 3, further comprising an expanded skirt, which expanded skirt holds a side inflatable member adapted for placement adjacent a lower side of a load-bearing animal.

13. An interface pad as described in claim 1, wherein said at least one inflatable member is adapted to pad an interface between a human and an object, and said fasteners are adapted for affixing said at least one inflatable member in position adjacent said object.

14. An interface pad as described in claim 13, adapted for use adjacent a seat, said pad having two inflatable members, a lower inflatable member adapted for placement between the seat and the human resting on that seat and a back inflatable member adapted for placement between a back of the human and a back of the seat.

15. An interface pad as described in claim 14, wherein said back inflatable member is adapted to serve as a lumbar support.

16. An interface pad as described in claim 13, further comprising a receiving structure adapted to hold said at least one inflatable member in correct position with respect to said object.

17. An interface pad as described in claim 14, wherein said at least one inflatable member is adapted to cover areas appropriate to a vehicle seat such as one of an automobile seat, a motorcycle driver seat, a motorcycle rider seat, and an other vehicle seat.

18. An interface pad as described in claim 16, wherein said receiving structure is adapted to covers areas appropriate to a particular type of seat such as one of an automobile seat, a motorcycle driver seat, a motorcycle rider seat, and an other vehicle seat.

19. An interface pad as described in claim 13, wherein said at least one inflatable member is adapted to pad an interface between a human and a prosthetic, and the fasteners are adapted for affixing said at least one inflatable member in position with respect to said prosthetic.

5 20. An interface pad, as described in claim 1, wherein a valve is a proportionate valve, which proportionate valve is adjustable to different pressure settings corresponding to different weight load settings for weight loads to be placed on the inflatable member, which different weight load settings allow air to escape from the proportionate valve until weight load setting pressures are
10 reached, and which different weight load settings inhibit air from escaping from the inflatable member in direct proportion to weight loads placed on the inflatable member.

 21. An interface pad, as described in claim 20, wherein said proportionate valve uses a spring member to hold the valve closed and the
15 tension of said spring is adjustable to different pressure settings such that said spring will hold the valve closed only if the pressure exerted by a gas on the valve is not greater than the setting pressure.

 22. An interface pad, as described in claim 21, wherein the tension of said spring is adjusted and the pressure set by turning a rotating member.

20 23. An interface pad, as described in claim 22, wherein said rotating member has a marker that can be moved to correspond to different pressure setting indicators by turning the rotating member.

 24. An interface pad, as described in claim 22, wherein said rotating member has snap members that snap into indents when the rotating member is
25 turned.

 25. An interface pad as described in claim 1, wherein said at least one inflatable member acts as an orthotic.

26. An interface pad as described in claim 1, further comprising non-slip material placed outwardly of said at least one inflatable member proximate at least one surface of said at least one inflatable member.

27. An interface pad as described in claim 26, wherein said non-slip
5 material includes a polyester mesh with PVC coating, which mesh is oriented outwardly from the at least one inflatable member.